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Services  
Vendor  
Financial Watch**


**1989 Annual Performance**

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# INFORMATION SERVICES VENDOR FINANCIAL WATCH

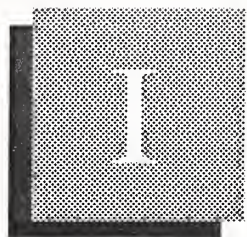
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***Vendor Financial Watch***

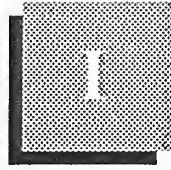
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# Introduction







## Introduction

The Vendor Financial Watch (VFW) is an INPUT comparison of financial reports of public information services companies. It provides vendor-by-vendor comparisons and performance data by delivery mode which can be used to compare with market forecasts.

Each information services delivery mode is analyzed from revenue and net income standpoints. Extraordinary company results are explained at the end of each section.

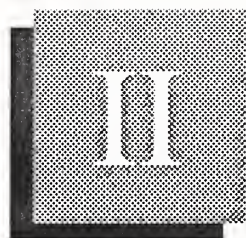
The summary analysis at the back of the VFW report analyzes the comparative trends among modes and comments on the trend of the total information services market. This section is particularly important since it identifies growth patterns very clearly.

The data contained herein are extracted from published sources, annual reports, and 10-K reports.

This issue covers 101 information services vendors.

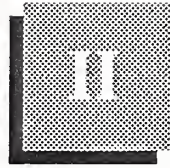






## Data Reported





## Data Reported

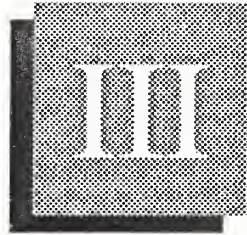
The VFW report is divided into two sections:

- Information services delivery mode analysis
- Total information services industry financial performance

Financial data provided include each vendor's annual revenue and net income, and comparisons on performance for 1984 versus 1988. This data is provided on a calendar year, rather than a fiscal year basis for meaningful comparison.

'Net Income' is not income after taxes and extraordinary items. Vendors are categorized according to the mode of delivery forming the largest proportion of 1989 revenues.

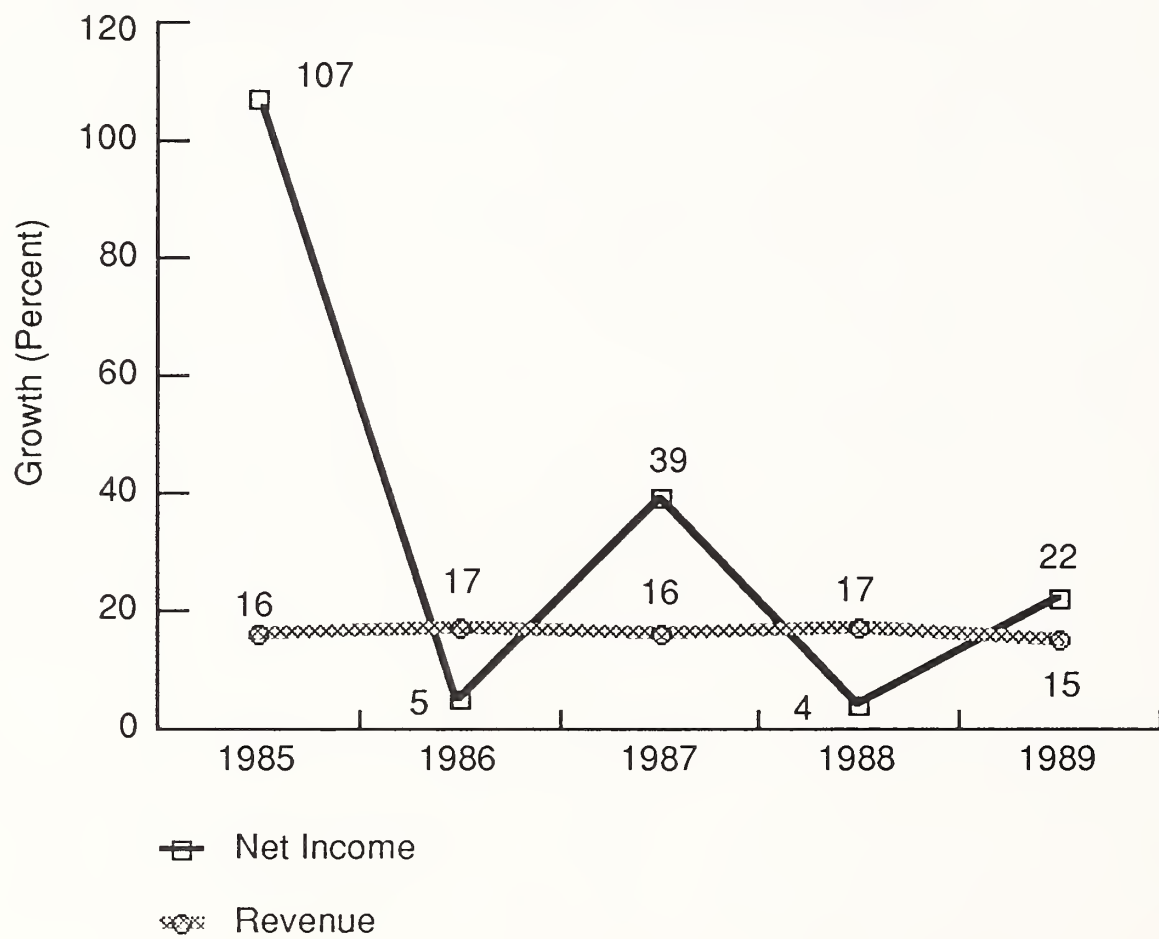


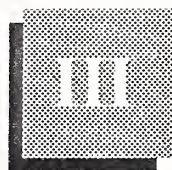


# Processing/Network Services Trends Analysis



### Public Processing/Network Services Vendors





## Processing/Network Services Trends Analysis

Revenue growth for the public processing/network services group has remained relatively constant during the past five years, ranging between 15% and 17% per year, as shown in the exhibit.

Earnings growth for this group has fluctuated significantly during the past five years. Earnings grew 22% in 1989, compared with only 4% in 1988, 39% in 1987 and 5% in 1986.

Profitability for the processing/network services group is running slightly above average for the information services industry as a whole. During 1989, the profit margin maintained by the group was 8.5%, compared to the industry average of 7%.

Several public processing/network services firms were acquired during 1989 and were omitted from this report, including DYATRON (acquired by SunGard Data Systems), ISI Systems (acquired by Memotec Data), and National FSI (acquired by SEI Corporation).

Hale Systems was removed from the list because it went out of business. Scicom Data was removed because it now operates as a private company.

Systematics results are included for this report; however, the company was acquired by Alltel in early 1990.

## Public Processing/Network Services Companies

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
ADP	1,616.8	1,689.5	4	178.2	196.2	10
COMDATA HOLDINGS	111.3	159.0 <sup>1</sup>	43	-8.8	-11.7 <sup>2</sup>	-33
COMP-U-CHECK	8.7	7.7	-11	-0.4	-1.9	-386
COMPUTER LAN	117.4	126.1	7	-1.9 <sup>3</sup>	0.7	133
COMPUTER SERVICES	13.5	15.2	12	1.4	1.4	-1
CONCORD COMP.	27.4	31.0	13	2.9	3.8	31
CYCARE	84.0	86.2	3	0.5	3.1	520
DST SYSTEMS	138.4	127.0	-8	11.6	6.0 <sup>4</sup>	-48
FIRST FIN. MGMT.	427.6 <sup>5</sup>	666.7 <sup>5</sup>	56	34.4	56.8	65
FISERV	125.0	164.0 <sup>6</sup>	31	9.1	11.4	25
GTECH	146.0	171.2	17	3.1 <sup>7</sup>	5.4	74
M/A/R/C	62.3	61.6	-1	3.0	2.9	-3
NATIONAL DATA	194.2	269.3 <sup>8</sup>	39	17.6	24.9 <sup>9</sup>	41
PAYCHEX	91.1	110.3	21	8.4	9.6	14
PAY-FONE	6.0	5.9	-2	0.1	0.0	81
SANDATA	9.5	11.9	25	0.1	0.2	100
SCS/COMPUTER	30.4	35.8	18	1.2	1.2	0
SEI	131.9	149.1	13	13.2	12.1	-8
SHARED MEDICAL	378.7	390.0	3	29.3	23.1 <sup>10</sup>	-21
SYSTEMATICS	194.3	220.7	14	17.2	19.5	13
TELECREDIT	153.8	167.1	9	1.0 <sup>11</sup>	27.9	2,668
TOTAL SYS.SVCS	56.2	65.9	17	9.6	11.3	18
WORLCO DATA	12.1	13.2	9	-1.0	-0.4	57
Total	4,136.5	4,744.3	15	329.8	403.4	22



Footnotes (Processing/  
Network Services)

1. Comdata's revenue increase during 1989 was primarily attributed to the acquisition of certain funds transfer-related businesses from First Data Resources in June 1989, as well as the acquisition of American Facsimile Systems, Inc. in December 1988. These acquisitions added approximately \$35 million to 1989 revenue.
2. Comdata's net losses increased during 1989 due to acquisition-related costs and nonrecurring expenses of \$3.9 million resulting from a reduction in the carrying value of equipment of its Retail Check Payment segment.
3. Computer Language Research's 1988 results include a \$1.5 million gain from the sale of its Micro-Tax software product line.
4. DST's 1989 net income was impacted by costs incurred to accelerate the development of a new image-based processing system.
5. First Financial Management Corporation results were restated to reflect the pooling-of-interests acquisition of MicroBilt in 1989. Revenue growth in 1989 was partly attributed to acquisitions, including MicroBilt, the Computer Company, and Data Preparation, Inc. Georgia Federal Bank, also acquired in 1989, contributed \$92 million to total 1989 revenue.
6. FIServ's 1989 revenue growth was partly attributed to the 1989 acquisitions of Triad Software Network, Ltd. and Northeast Datacom, Inc.
7. GTECH's 1988 results include a one-time gain of \$2.7 million from the sale of its investment in InterVoice, Inc. and a loss from discontinued operations of \$2.4 million associated with its Datamax subsidiary.
8. National Data's 1989 results were partly attributed to the acquisition of Modular Data, Inc. in February 1989.
9. National Data's 1989 results include a final adjustment of \$1.1 million in income related to the discontinuance and sale of the company's Rapidata processing business.
10. Shared Medical Systems' 1989 net income includes \$5 million resulting from a change in the method of accounting for income taxes, less approximately \$7 million in recurring charges related primarily to employee benefit plans and equipment reserves.
11. Telecredit's 1988 results include a \$25.2 million provision related to the restructuring of its Light Signatures Inc. subsidiary.

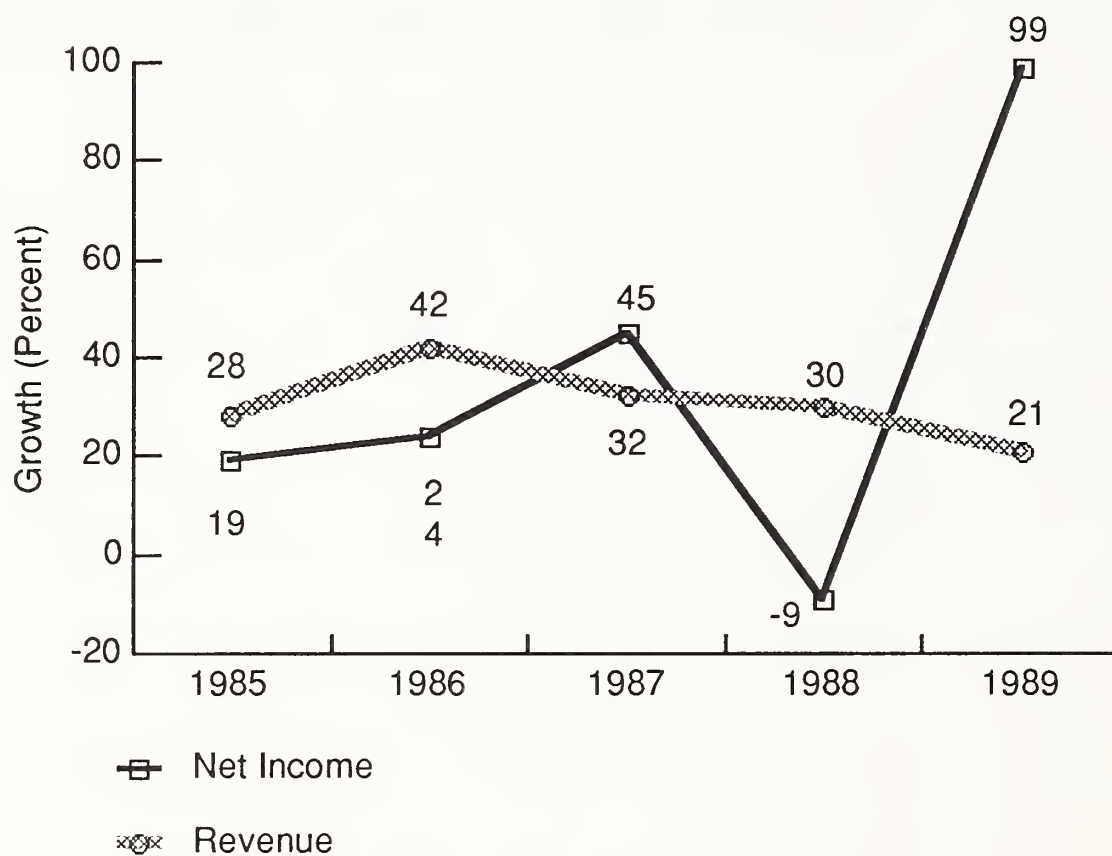


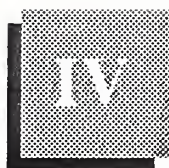


# Electronic Information Services Trends Analysis



### Public Electronic Information Services Vendors





## Electronic Information Services Trends Analysis

INPUT elected to examine the public electronic information services vendors separately from the rest of the processing/network services group due to the difference in the market for these services.

Electronic information services represent a newer market than some of the other processing and network services. Electronic information services include data bases, news services, and videotex services. Growth for companies focusing on providing electronic information services has slowed since 1986, but remains above the industry average at 21% for 1989.

Telerate was the largest of the public electronic information services vendors until its remaining interest was purchased by Dow Jones in late 1989. CUC International grew 35% in 1989 and represents the most significant growth for the group as a whole.

Earnings growth has been more volatile for these vendors. Losses during 1988 and 1989 (which do not include Telerate's results) reflect charges made to operations by CUC in both 1988 and 1989, and costs associated with survey-based businesses discontinued by Information Resources during 1989.

## Public Electronic Information Services Companies

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
ACXIOM	68.3	84.9	24	3.8	5.7	50
CUC INTERNATIONAL	271.8	367.5	35	-11.2 <sup>1</sup>	8.1 <sup>2</sup>	172
EPSILON	53.3	47.2 <sup>3</sup>	-11	1.0	-2.0	-300
INFO. RESOURCES	129.2	136.4	6	0.2	-12.1 <sup>4</sup>	-6,150
LCS INDUSTRIES	31.1	33.4	8	0.3	0.2 <sup>5</sup>	-2
Total	553.7	669.4	21	-5.9	-0.1	99

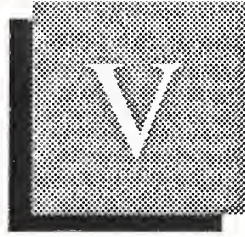
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**Footnotes (Electronic  
Information Services)**

1. CUC's 1988 results include a charge to operations of \$58.9 million related to the acceleration of the amortization of membership acquisition costs.
2. CUC's 1989 results include \$4.3 million in recapitalization costs.
3. Epsilon's 1989 results were attributed to the loss of two major accounts early in calendar 1989.
4. Information Resource's 1989 results include restructuring costs of \$5 million and a \$10.7 million loss from discontinued operations, including three survey-based businesses.
5. LCS Industries' 1989 results include a \$270,000 charge related to the closing of the company's Motivational Marketing Division.



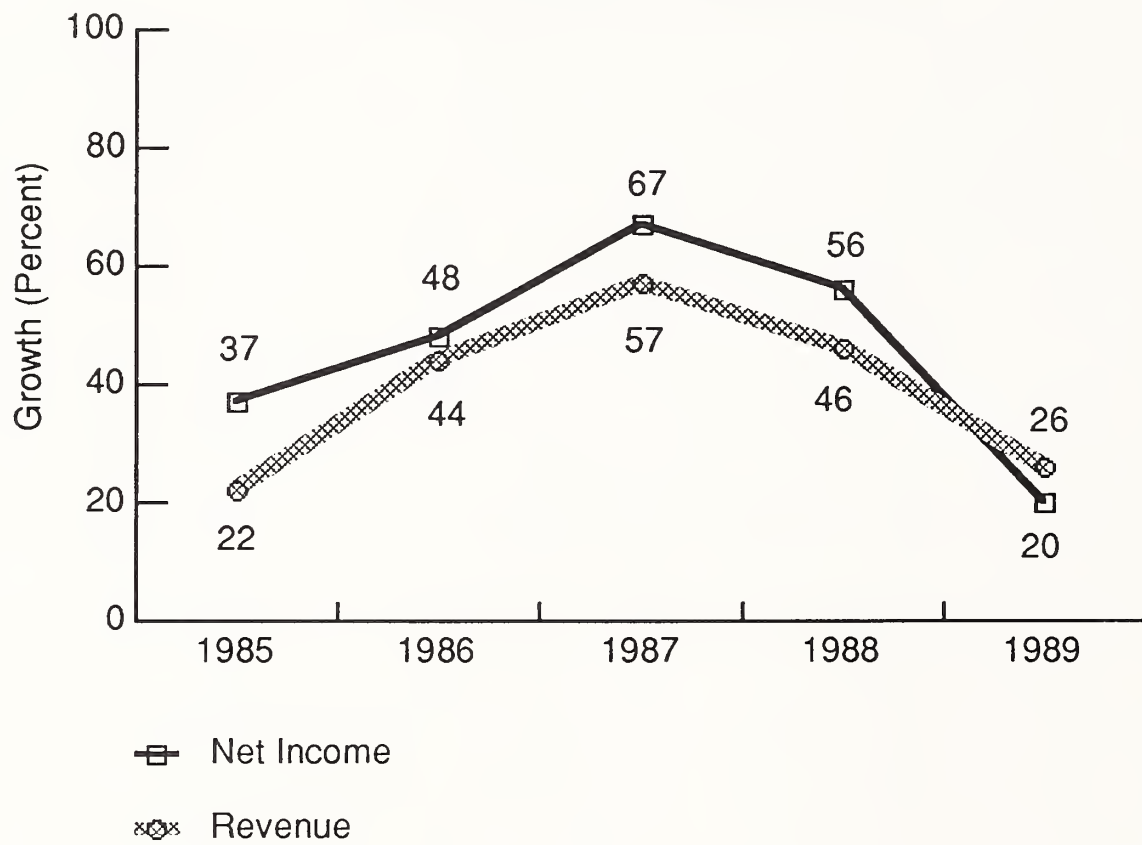


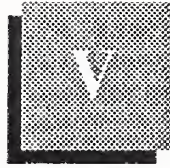


# Systems Software Products Trends Analysis



### Public Systems Software Products Vendors





## Systems Software Products Trends Analysis

Growth for these vendors was 26% in 1989, compared to 46% and 57% in 1988 and 1987, respectively. Computer Associates, the largest of the public systems software products vendors, grew 9% during 1989. Computer Associates results were adversely impacted by the lengthy process of acquiring Cullinet and integrating the Cullinet product line.

The most substantial growth for the group (95%) came from Oracle, which acquired professional services firm Falcon Systems in September 1988.

Earnings growth for this group of vendors slowed to 20% during 1989. Most of the vendors performed well throughout the year. The exceptions were Ashton-Tate, Cognos, and Ingres. Ashton-Tate's \$28.6 million loss for the year, the most significant loss sustained by the group, was attributed to revenue declines resulting from the decision to reduce distribution channel inventories after consumer acceptance of dBASE IV version 1.0 failed to meet Ashton-Tate forecasts.

The profitability situation for this group of vendors for 1989 was 12%, well above the average for the industry.

Morino Associates and Duquesne Systems merged to form LEGENT Corporation.

## Public Systems Software Products Companies

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
ADOBE SYSTEMS	83.5	121.4	45	21.2	33.7	59
ASHTON-TATE	307.3	265.3 <sup>1</sup>	-14	47.7	-28.6 <sup>2</sup>	-160
BGS SYSTEMS	17.1	20.2	18	2.6	4.0	54
BOOLE & BABBAGE	61.5	78.9	28	3.7	5.4	46
COGNOS	98.8	113.6	15	5.3	-14.9 <sup>3</sup>	-379
COMPUTER ASSOC.	1,133.0 <sup>4</sup>	1,230.2 <sup>4</sup>	9	96.9 <sup>4</sup>	149.3 <sup>4</sup>	54
INFODATA SYS	12.3	12.0	-3	0.5 <sup>5</sup>	-0.8	-278
INFORMIX S/W	103.5	145.0	40	0.4	6.4 <sup>6</sup>	1500
INGRES	108.2	143.4	33	6.4	1.9	-70
INTELLICORP	20.9	23.4	12	0.4	1.3	225
LEGENT	103.5	134.3	30	20.9	24.0	15
MICROSOFT	718.5	952.8	33	151.4	210.5	39
ON-LINE SOFTWARE	81.2	85.0	5	-2.7	3.3 <sup>7</sup>	222
ORACLE	394.8	769.3 <sup>7</sup>	95	56.4	97.7 <sup>7</sup>	73
PANSOPHIC	189.0	232.0 <sup>8</sup>	23	19.3 <sup>9</sup>	19.8	2
SAGE SOFTWARE	20.7	23.9	15	1.9	2.3	21
SYNERCOM TECH.	13.5	16.2	20	-1.6	1.1	171
SYSTEMS CENTER	51.7	66.2	28	7.4	10.6	43
Total	3,519.0	4,433.1	26	438.1	527.0	20

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**Footnotes  
(Systems Software)**

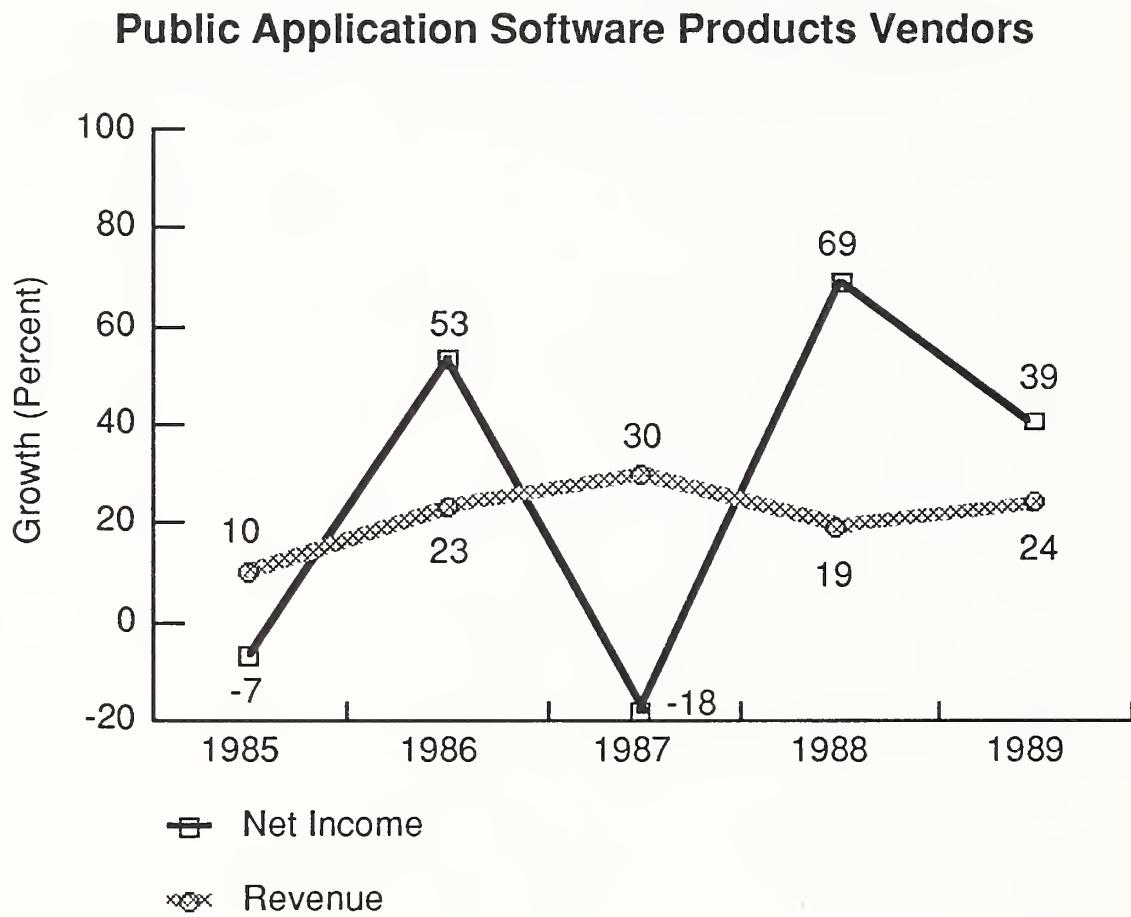
1. Ashton-Tate's revenue decline in 1989 resulted primarily from the company's program to substantially reduce distribution channel inventories after consumer acceptance of dBASE IV version 1.0 did not meet Ashton-Tate forecasts.
2. Ashton-Tate's losses for 1989 include write-offs of certain product rights and inventories valued at \$11.1 million, principally related to the Decision Resources product line acquired in 1986.
3. Cognos' 1989 losses include \$4.7 million in restructuring charges.
4. Computer Associates' results have been restated to reflect the pooling-of-interests acquisition of Cullinet in September 1989.
5. Infodata's 1988 results include a gain on securities transactions of \$84,000 and a tax benefit of \$156,000 from net operating loss carry-forward.
6. Ingres' 1989 results were attributed to expenses associated with porting INGRES Release 6 to all of the hardware platforms supported and major marketing expenditures.
7. Oracle's results include the operations of Falcon Systems from the date of its acquisition in November 1988.
8. Pansophic's 1989 results include the operations of the Systems Division of Genigraphics Corporation from the date of its acquisition in May 1989.
9. Pansophic's 1988 results include an after-tax gain of \$1.4 million from the sale of nonexclusive Telon 38 marketing rights.



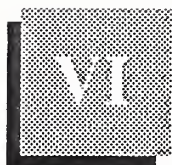


# Application Software Products Trends Analysis









## Application Software Products Trends Analysis

Application software products vendors have grown steadily during the past few years. In 1989, revenues for the group grew 24% over the previous year. The most significant growth (82%) was achieved by Cadence Design Systems, which acquired Gateway Design Automation Corporation in a pooling-of-interests transaction in December 1989, and Tangent Systems in March 1989. These two acquisitions added over \$32 million to Cadence's 1989 revenue.

Omitted from the group this year was Management Science America, which was acquired by Dun & Bradstreet during 1989 and merged with McCormack & Dodge.

During the past five years, growth in earnings has fluctuated continuously from quarter to quarter and year to year. In 1989, earnings for the group grew 39%. Results were positively impacted by Cadence (whose earnings increased 75%, due partially to acquisitions), Autodesk (whose earnings increased 42%), and System Software Associates (whose revenue increased 40% during 1989).

Profitability for the applications software products group rose to 13% during 1989.

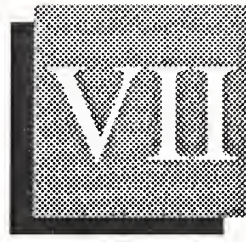
## Public Application Software Products Companies

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
AMERICAN SOFTWARE	64.2	86.3	34	13.8	17.2	25
AUTODESK	117.3	178.6	52	32.7	46.4	42
CADENCE DESIGN	78.6 <sup>1</sup>	142.8 <sup>1</sup>	82	15.9 <sup>1</sup>	27.8 <sup>1</sup>	75
COMSHARE	82.9	94.6	14	3.6	6.3	75
CYBERTEK	20.9	24.0	15	-0.2	1.8	1,000
FDP	14.0	14.7	5	0.9 <sup>2</sup>	-0.1 <sup>3</sup>	-111
GENESEE	1.3	1.7	31	0.1	0.2 <sup>4</sup>	100
HOGAN SYSTEMS	48.1	46.8	-3	-0.3 <sup>5</sup>	3.3	1,389
INFO SCIENCE	13.0 <sup>6</sup>	13.8	6	-0.2 <sup>6</sup>	-0.4	-100
LOTUS DEVELOP	468.6	556.0	19	58.9	68.0 <sup>7</sup>	15
MACNEAL SCHWEND.	40.0	45.0	13	8.9	9.8	10
POLICY MGMT.	216.9	265.6 <sup>8</sup>	22	20.5	26.8 <sup>8</sup>	31
SCIENTIFIC S/W	23.6	20.9	11	-2.2	0.5	123
SILVAR-LISCO	19.3 <sup>9</sup>	13.6	-30	-3.3	-6.1 <sup>10</sup>	
SOFTWARE PUB.	82.3	110.4	34	14.8	18.8	27
S/W SVC AMER.	7.4	3.2	-57	0.0	-0.7 <sup>11</sup>	-6,900
STOCKHOLDER SYS.	20.9	23.6 <sup>12</sup>	13	3.5	3.2 <sup>13</sup>	-9
SYSTEM SOFT	70.6	98.6	40	7.2	12.1	68
TIMBERLINE S/W	9.0	10.7	19	0.4 <sup>14</sup>	0.8	103
WORDSTAR	41.9	41.9	0	-7.7 <sup>15</sup>	-3.3 <sup>16</sup>	57
Total	1,440.8	1,792.8	24	167.3	232.4	39

Footnotes  
(Application  
Software)

1. Cadence's financials have been restated to reflect the pooling-of-interests acquisition of Gateway Design Automation Corporation in December 1989. Cadence's 1989 revenue also includes the results of Tangent Systems Corporation from the date of its acquisition in March 1989.
2. FDP's 1988 results include a tax credit of \$324,000 from the cumulative effect of a change in accounting for income taxes.
3. FDP's 1989 results were attributed to the financial effects of replacing timesharing revenue with revenue from the sale of software and services.
4. Genesee's 1989 results include a net gain of nearly \$70,000 from the sale of a building.
5. Hogan's 1988 results include a nonrecurring write-off of \$3.6 million associated with the suspension of development efforts on a micro-to-mainframe communications software product.
6. Information Science's 1988 results have been restated to reflect certain changes in the method of accounting for revenue and certain expenditures.
7. Lotus' 1989 results include a pretax gain of \$6.8 million from the sale of Lotus Information Network Corporation, a provider of real-time stock market information using FM-sideband technology.
8. Policy Management Systems' 1989 results include the results of Advanced System Applications, Inc. from the date of its acquisition in November 1989.
9. Silvar-Lisco's 1988 results have been restated to reflect a change in the method of accounting for revenue on license fees and maintenance.
10. Silvar-Lisco's 1989 results include a \$1.6 million gain from the sale of the majority interest in the company's European development subsidiary, less \$4 million in restructuring costs and a \$2 million reserve associated with the termination of a research and development contract with Prutech Research and Development Partnership II.

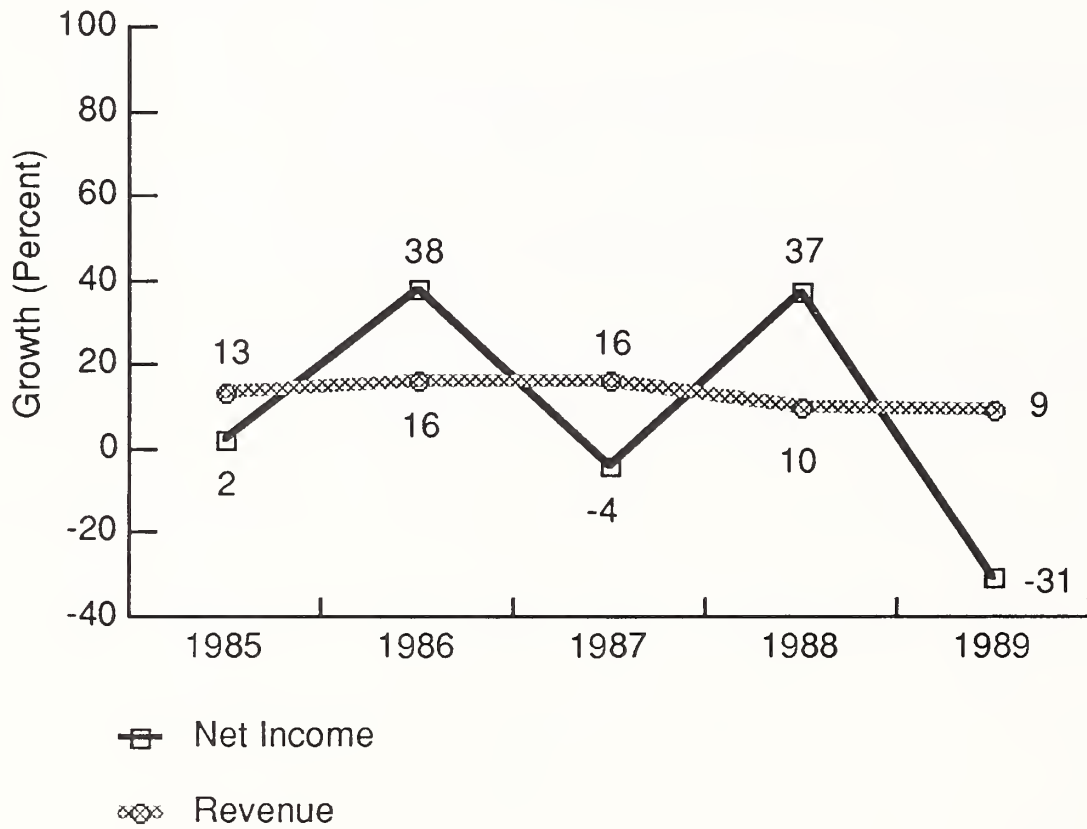
11. Software Services' revenue declines during 1989 were attributed to the company's focus on the development of a new branch automation system.
12. Stockholder Systems' 1989 results include the operations of Fannie Mae Software Systems from the date of its acquisition in June 1989.
13. Stockholder Systems' 1989 results were attributed to lower than expected product license sales, increased expenses associated with the acquisition, and research and development costs related to a new retail data base system and a mainframe-based loan recovery system.
14. Timberline's 1988 results include a one-time charge to earnings of \$235,000 related to the write-off of development costs of a tax preparation software product.
15. WordStar's 1988 results include a one-time charge of \$1.8 million relating to a settlement of a securities lawsuit.
16. WordStar's 1989 results include a one-time charge of about \$1.1 million for the write-off of an investment in a Macintosh product acquired from Challenger Software.



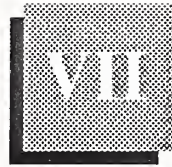
# Government Professional Services Trends Analysis



### Public Government Professional Services Vendors







## Government Professional Services Trends Analysis

Growth for government professional services vendors has been moderate for most of the past five years. Revenues for these companies grew an average of 9% in 1989, compared to 10% in 1988 and 16% in 1987.

Professional services for the government represents a mature market targeted by several large vendors, the largest being Computer Sciences Corporation. In 1989, Computer Sciences generated revenues in excess of \$1.4 billion, equal to growth of 15% for the year. Other large government professional services firms include American Management Systems (AMS), Bolt Beranek & Newman (BBN), C.A.C.I., Logicon, and Sterling Software. Of the entire group of companies, Computer Data grew the fastest in 1989 (56%), benefitting from contract wins from the Department of Energy and GSA awarded during late 1988.

The group experienced a 31% decline in earnings during 1989. The decrease was primarily due to the results of BBN, whose losses were attributed to the poor performance of its BBN Advanced Computers unit and its Communications subsidiary. For the year 1988, earnings growth for the group was 37%, compared to a drop in earnings of 4% in 1987 and an increase of 38% in 1986.

Profitability for government professional services vendors is well below average for information services vendors overall. In 1989, the group earned 2% in revenues.

## Public Government Professional Services Companies

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
AMER. MGMT SYS.	213.3	225.3	6	7.3 <sup>1</sup>	6.2	-15
BBN	302.1	274.1	-9	12.4 <sup>1</sup>	-34.2 <sup>2</sup>	-375
C.A.C.I.	144.3	142.6	-1	4.2	3.2	-24
COMPUTER DATA	78.3	122.3	56	1.5	2.4	60
CSC	1,253.4	1442.8 <sup>3</sup>	15	49.6	58.4	18
DYNAMICS RES.	92.9	88.5	-5	4.1	3.6	-12
INTERMETRICS	48.9	46.7	-4	2.6	2.0 <sup>4</sup>	-22
LOGICON	231.0	254.2	10	8.9	8.6	-3
SOFTECH	46.5	48.7	5	1.1	1.5	36
STERLING SOFTWARE	178.8	184.4	3	0.7 <sup>5</sup>	11.0	1,569
TELOS	112.2	124.7	11	3.0	2.8	-7
Total	2,701.7	2,954.3	9	95.4	65.5	-31

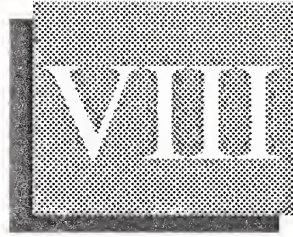


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Footnotes  
(Government  
Professional Services)

1. BBN's 1988 net income includes \$6.4 million from the cumulative effect of a change in the method of accounting for income taxes.
2. BBN's losses in 1989 were attributed to the poor performance of BBN Advanced Computers, cost overruns for a communications network for Japan Air Lines, and a restructuring charge of \$5.1 million related to certain manufacturing operations.
3. CSC's results include the operations of Compufact and Infonet through March 31, 1989. Compufact was sold in early 1989 and CSC reduced its ownership of Infonet to a minority interest in January 1989.
4. Intermetrics' 1989 profit declines were attributed to lower revenue, reflecting the slower pace of spending by the U.S. Department of Defense throughout the year.
5. Sterling's 1988 results include losses (net of applicable income taxes) on disposals of discontinued operations of approximately \$8.0 million. Businesses sold or discontinued during 1988 included the North American and international commercial professional services operations and Check Consultants, Inc.

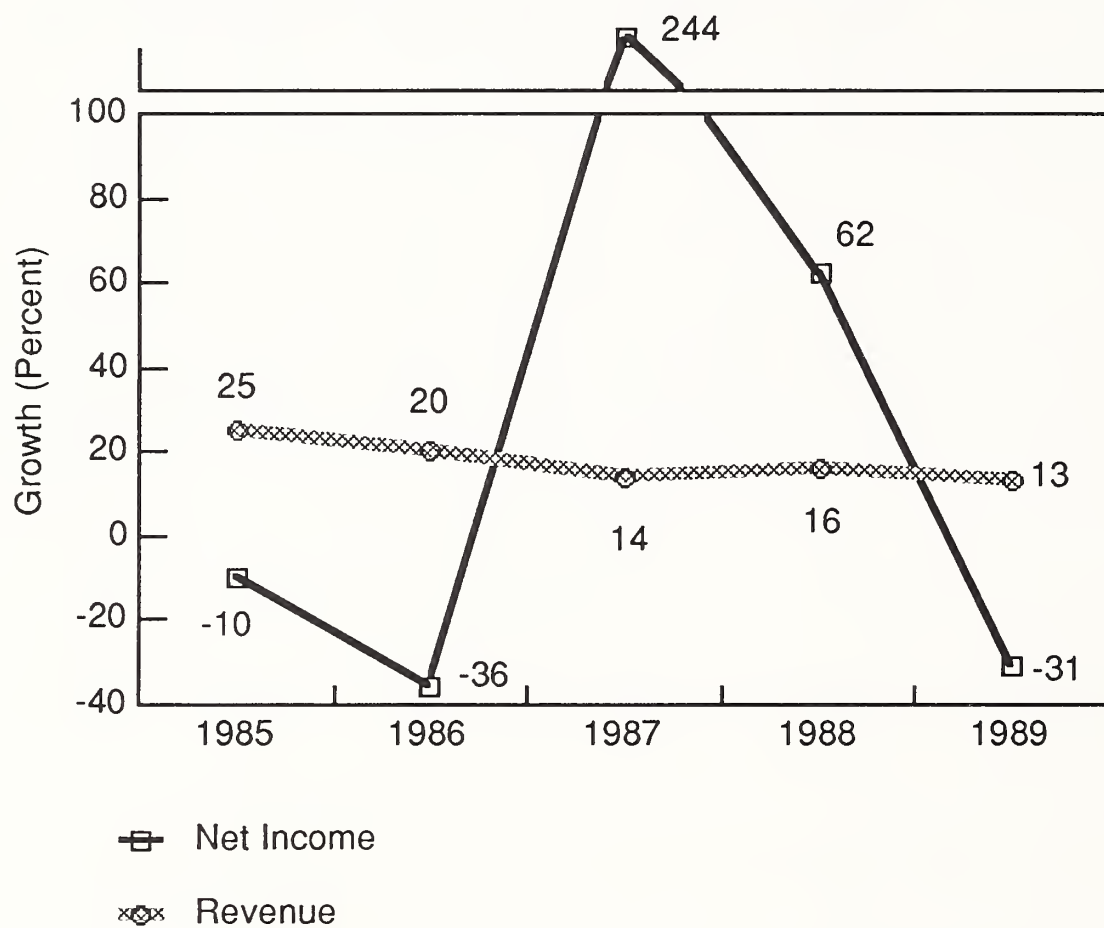


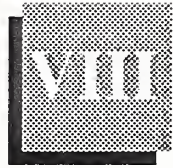


# Commercial Professional Services Trends Analysis



# Public Commercial Professional Services Vendors





## Commercial Professional Services Trends Analysis

Growth for the commercial professional services vendors has slowed somewhat during the past three years. Revenues for commercial professional services companies increased 13% from 1988 to 1989.

Results for 1989 were much more consistent among the commercial professional services vendors, with all companies achieving revenue growth during the year. The largest increases were achieved by Analysts International and Keane. Computer Task Group, the largest of the commercial professional services companies, grew 7% during 1989.

Earnings for this group have fluctuated. Earnings declined 31% during 1989, after growing 62% during 1988 on top of 1987 growth of 244%. The 1989 declines were due primarily to the results of Computer Task Group, which included expenses of \$17.4 million for certain restructuring and closing of unprofitable branch offices.

Profitability for the commercial professional services group was well below average and even lower than for the government professional services group in 1988. Commercial professional services companies earned only 1.7% of revenues on average for the year.

Note that Advanced Computer Techniques was removed from the list of public professional services vendors, since the company's professional services business was spun off into a joint venture. Technowlege also was removed due to its merger in 1989 with American Cimflex.

## Public Commercial Professional Services Vendors

Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
ANALYSTS INTL	78.7	98.9	26	3.7	5.4	46
BRANDON SYSTEMS	27.9	30.6	10	2.1	2.0	-5
COMP. HORIZONS	79.1	84.7	7	1.3	-0.3 <sup>1</sup>	-123
COMP. TASK GROUP	218.7	233.0	7	6.5	-7.8 <sup>2</sup>	-220
CONTINUUM	67.2	75.1	12	0.1	3.1 <sup>3</sup>	3,000
KEANE	60.0	77.2 <sup>3</sup>	29	2.8	3.6 <sup>3</sup>	29
SYS. & COMP TECH.	37.3	44.5	19	-1.6 <sup>4</sup>	3.4	313
TECHNALYSIS	17.7	20.7	17	1.7	2.0	18
Total	586.7	664.7	13	16.6	11.4	-31

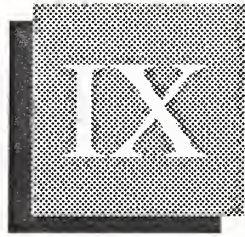
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Footnotes  
(Commercial  
Professional Services)

1. Computer Horizons' 1989 results include restructuring charges of \$3.3 million associated with a plan to reduce costs. Actions included the closing and consolidation of certain offices, work force reductions, and other write-offs.
2. Computer Task Group's 1989 results include expenses of \$17.4 million for certain restructuring and closing of businesses. In the second quarter of 1989, the company closed four branches which were unprofitable and eliminated 65 overhead positions. In the fourth quarter, the company incurred expense and set up reserves of \$13.6 million as a result of restructuring efforts to overcome disappointing results in certain areas.
3. Keane's 1989 results include the operations of Computer Consultants, Database Management Systems, and Mezaros Associates (ComPro) from their respective dates of acquisition in 1989.
4. Systems & Computer Technology's 1988 results were attributed to lower revenues, combined with continuing investments in product development.



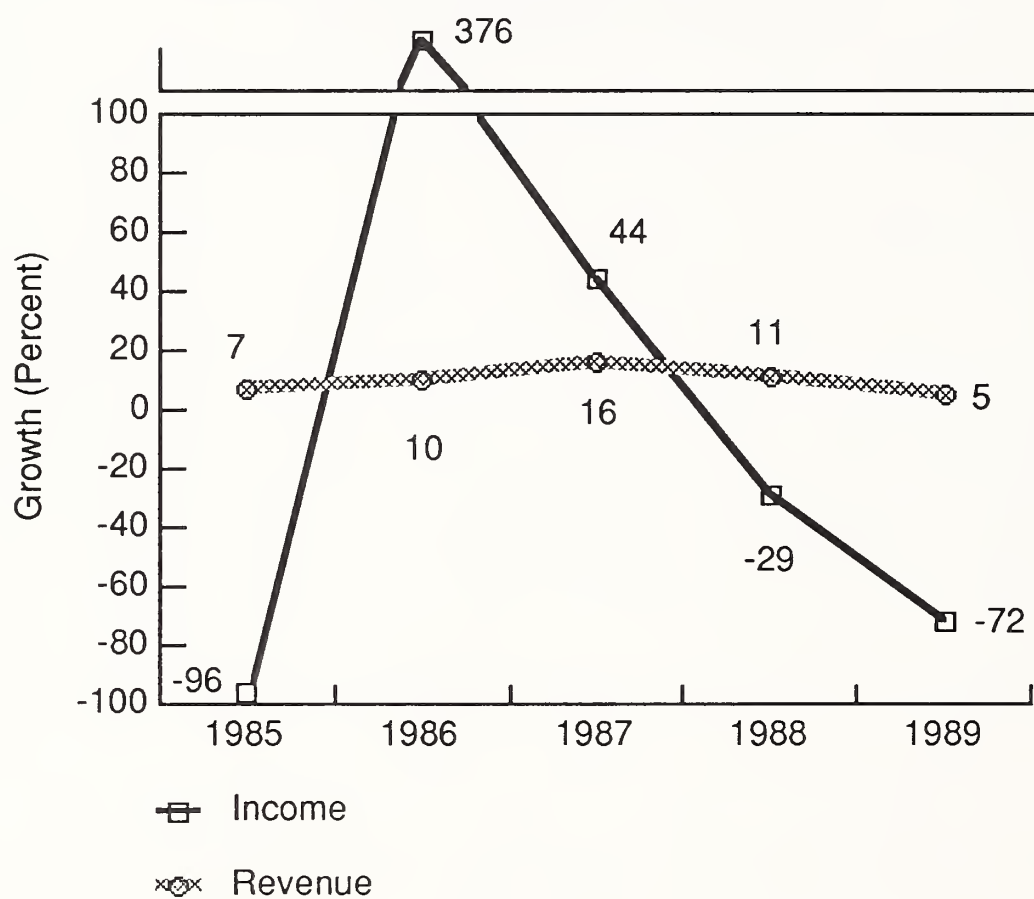


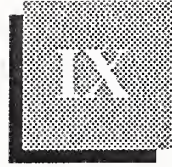


# Turnkey Systems Trends Analysis



# Public Turnkey Systems Vendors





## Turnkey Systems Trends Analysis

Growth for turnkey systems vendors has been moderate to low during the past five years. Actually, much growth occurred within the small group of turnkey systems vendors INPUT tracked between 1983 and 1984. Since then, growth has slowed.

Revenue grew 5% for the turnkey systems vendors in 1989, compared to 11% in 1988 and 16% in 1987. The most significant contributors to the growth in 1989 were ASK Computer Systems, Cerner, Gerber Scientific, and Interleaf. Interleaf's results have been included in the turnkey systems segment of this report. However, in late 1989, the company announced it would be exiting the turnkey systems business and focusing on providing software and services.

Earnings growth for the turnkey systems group has been somewhat volatile during the past five years. In 1989, earnings fell 72% from the prior year due to losses incurred primarily by C3, Daisy Systems, and Interleaf.

In 1989, profitability for the turnkey systems group ran below the average for information services vendors overall. The group earned 1.2% on the revenues it generated.

Avant-Garde was removed from the list of public turnkey systems vendors because it was acquired by Boole & Babbage. Computer Consoles was removed because it was acquired by STC PLC. ISC Systems was also removed because it was acquired by Olivetti.

## Public Turnkey Systems Vendors

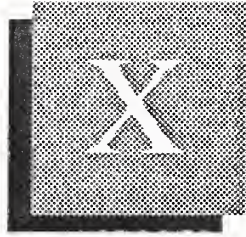
Company Name	Revenue			Net Income		
	1988 (\$ Millions)	1989 (\$ Millions)	% Change	1988 (\$ Millions)	1989 (\$ Millions)	% Change
ASA INTERNATIONAL	19.3	23.8	23	-0.5	0.5 <sup>1</sup>	200
ASK COMPUTER SYS.	168.3	189.6	13	12.2	9.3	-24
AUTO-TROL TECH.	74.3	76.9	3	1.5	-4.4 <sup>2</sup>	-393
BARRISTER INFO.	33.5	31.0	-7	-4.6 <sup>3</sup>	-7.1 <sup>4</sup>	-54
C3	70.8	57.6 <sup>5</sup>	-19	1.6	-19.3 <sup>6</sup>	-1,309
CERNER	40.9	56.7	39	3.5	3.6	3
COMPTEK RESEARCH	50.9	47.4	-7	0.4	1.2	200
COMPUTRAC	12.3	13.4	9	1.9 <sup>7</sup>	1.8	-5
DAISY SYSTEMS	121.4	113.3 <sup>8</sup>	-7	-61.7	-93.3 <sup>9</sup>	-51
GERBER SCIENTIFIC	288.4	306.1	6	31.7	33.2	5
HBO	187.4	203.6	9	12.5	15.5	24
INTERGRAPH	800.2	860.1	7	88.0 <sup>10</sup>	79.5 <sup>11</sup>	-10
INTERLEAF	74.9	114.8	53	2.7	-15.6 <sup>12</sup>	-678
REYNOLDS & REYN.	612.2 <sup>13</sup>	591.9 <sup>14</sup>	-3	21.9	26.3	20
TERRANO	3.7	4.9	32	0.3	0.4	33
TRIAD SYSTEMS	136.3	148.9	9	10.2	2.7 <sup>15</sup>	-74
Total	2,694.8	2,840.0	5	121.6	34.3	-72

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Footnotes (Turnkey)

1. ASA International's 1989 results include a \$203,000 benefit of net operating loss carry-forward.
2. Auto-Trol's 1989 results include inventory write-downs of \$688,000 (resulting from supplier price declines) and a charge to income of \$988,000 resulting from a write-off of the remaining book value of certain capitalized software.
3. Barrister's 1988 results include tax and accounting credits of \$1.4 million.
4. Barrister's 1989 results include an inventory write-down of \$1.2 million.
5. C3's 1989 results were attributed to a drop in orders under C3's GSA schedule contract and insufficient new orders.
6. C3's 1989 losses include interest expenses of over \$12 million associated with loans used to finance the C3 acquisition by Knoll Capital Management L.P.
7. CompuTrac's 1988 results include a tax credit of \$434,000 from the cumulative effect of a change in accounting for income taxes.
8. Daisy Systems' 1989 results include the operations of Cadnetix Corporation, which was acquired effective December 31, 1988.
9. Daisy Systems' 1989 results include a loss of \$32.2 million resulting from the write-off of good will attributed to the sale of HHB Systems, Inc. in May 1989.
10. Intergraph's 1988 results include exchange and translation losses of \$2.2 million.
11. Intergraph's 1989 results include \$13.5 million in pretax gains on the sale of long-term investments, including a \$12 million pretax gain from the exchange of its ownership interest in Tangent Systems for shares of Cadence Design Systems common stock in March 1989. Earnings were also impacted by market pricing and higher operating expenses.
12. Interleaf's 1989 results include a one-time, \$13.5 million after-tax restructuring charge as a result of the company's decision (announced in November 1989) to exit the turnkey systems business and focus on providing software and services.

13. Reynolds' 1988 results were restated to reflect the adoption of a change in the method of accounting for majority-owned subsidiaries.
14. Reynolds' 1989 results exclude businesses sold during 1988, which contributed \$21.9 million to fiscal 1988 revenue.
15. Triad's 1989 results include nonrecurring charges of \$7.4 million (including \$6.5 million incurred in connection with an offer by Volt Information Sciences to purchase Triad and the resulting litigation and costs for preliminary refinancing), less a \$5.8 million pretax gain from the sale of real estate.

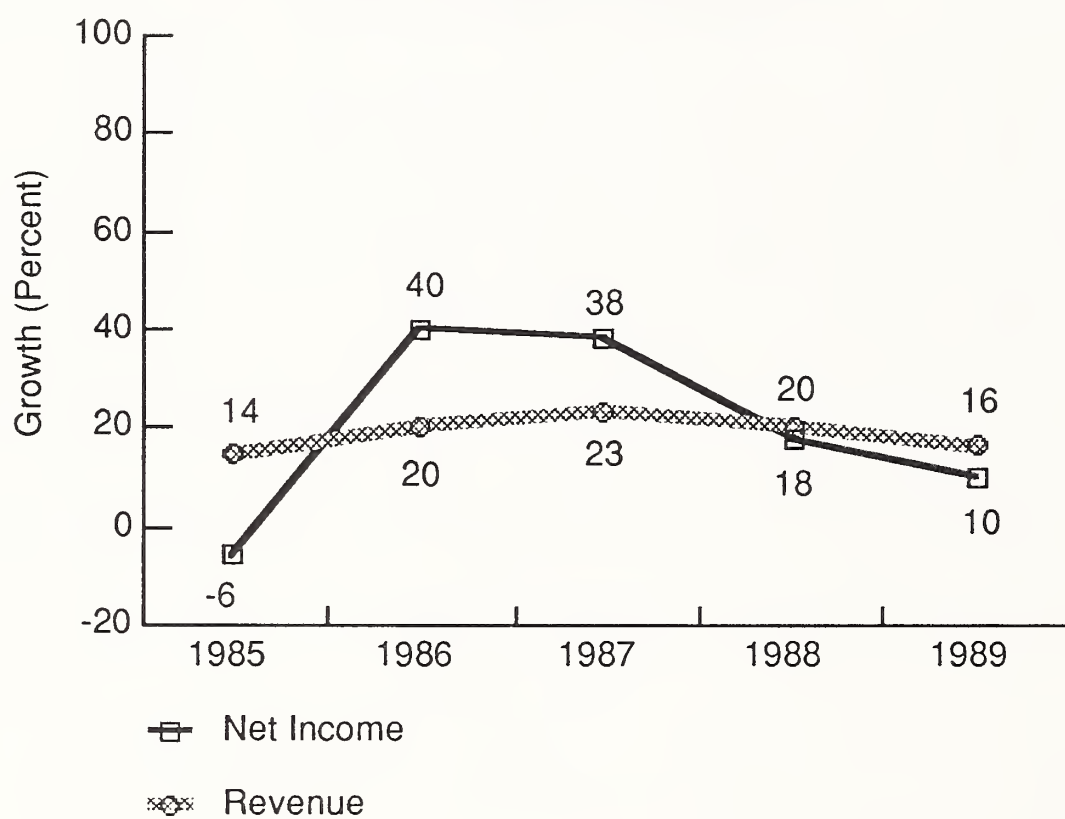


# Public Information Systems Trends Analysis

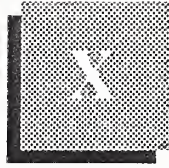




### Public Information Services Vendors







## Public Information Systems Trends Analysis

The public information services companies overall have maintained strong, steady growth during the past five years, with the exception of 1985, when the industry went through a tumultuous period. In 1989, revenues for the group overall grew 16% from 1988.

The most significant growth in 1989 came from electronic information services, systems software, and application software vendors. However, steady moderate growth was maintained by the processing/network services vendors and commercial professional services vendors.

Earnings growth slowed to 10% for 1989. Strong growth by electronic information services and application software vendors was offset by the earnings declines of professional services and turnkey systems vendors.

Profitability for information services vendors as a whole averaged 7% in 1989.

### Public Information Services Vendors Growth Rates (Percent)

		Revenue	Net Income
Processing/Network Services Companies	1985	16	107
	1986	17	5
	1987	16	39
	1988	17	4
	1989	15	22
Electronic Information Services Companies	1985	28	19
	1986	42	2
	1987	32	45
	1988	30	9
	1989	21	99
Systems Software Products Companies	1985	22	37
	1986	44	48
	1987	57	67
	1988	46	56
	1989	26	20
Application Software Products Companies	1985	10	-7
	1986	23	53
	1987	30	-18
	1988	19	69
	1989	24	39
Government Professional Services Companies	1985	13	2
	1986	16	38
	1987	16	4
	1988	10	37
	1989	9	-31
Commercial Professional Services Companies	1985	25	-10
	1986	20	-36
	1987	14	244
	1988	16	62
	1989	13	-31
Turnkey Systems Companies	1985	7	-96
	1986	10	376
	1987	16	44
	1988	11	-29
	1989	5	-72
Total Information Services Companies	1985	14	-6
	1986	20	40
	1987	23	38
	1988	20	18
	1989	16	10



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INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions.

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